



# OptiFuel

Precision and Portability in a  
Top of the Line FT-IR Fuel Analyzer

- ⊕ Superior performance and ruggedness
- ⊕ Expert service and support worldwide
- ⊕ Unmatched warranty on critical components

## ACCURATE, EASY AND RELIABLE FUEL ANALYSIS

For more than 20 years, PAC has been at the forefront of infrared (IR) fuel analysis with its PetroSpec products. Now we are combining the best of our GS PPA, TD PPA and QuickSpec capabilities into one analyzer and adding the latest FT-IR technology into the most robust fuel analyzer in the market.

The user-friendly system allows the operator to measure many properties at once with a simple touch of a button, using free factory calibration models. Users can customize the models with local samples in a few seconds. These custom models can easily be cloned to all your OptiFuels, even remotely, if necessary.

## GLOBAL SUPPORT

- Extensive support network through our offices and over 140 distributors worldwide
- ISO 9001 compliant manufacturing facility and service repair centers
- Skilled certified service technicians



• PAC Offices • Distributors

## KEY FEATURES



### EXTENDED WARRANTY

- 1-year standard system warranty
- **10-year optics warranty on the full range, laser-referenced Michelson interferometer**
- **5-year warranty on the IR light source**



### SUPERIOR PERFORMANCE

- Excellent correlation to a wide range of ASTM, EN and ISO standard
- Calibration lasts for years
- High resolution wide range FT-IR - ATR single flow cell
- Measure multiple parameters at once



### RELIABLE DESIGN

- Modern temperature-controlled laser referenced Michelson interferometer
- Humidity and vibration resistant ZnSe mirrors, beam splitters and non-moving sample cell



### LOW COST OF OWNERSHIP

- One instrument measures all types of samples without the need for extra hardware
- On-site, fast and minimal maintenance
- Low cost of consumables

## USER-FRIENDLY INTERFACE

- Intuitive interface requires minimal user training
- Large touch-screen allows easy navigation
- On-system, one-button-push model update with regional samples
- One-step, rapid calibration transfer and cloning
- Easy-to-use LIMS connectivity



## INCLUDED PARAMETERS

Every OptiFuel comes with an extensive set of calibration models built using hundreds of real-life samples of gasoline and diesel from all over the globe, following ASTM E1655. These calibration ranges are based on current factory models, but they all can easily be expanded in the field. Calibrations can easily be cloned and transferred to additional units.

### GASOLINE

Properties <sup>1</sup>	Range <sup>2</sup>
Research Octane Number (RON)	90 - 102
Motor Octane Number (MON)	81-92
Anti Knock Index (AKI)	85-98
Distillation Points	
IBP	25-46°C (77-115°F)
T10	39-66°C (102-151°F)
T50	67-116°C (153-241°F)
T90	124-178°C (255-352°F)
FBP	171-221°C (340-430°F)
Evaporation Points	
E70	12-52% (v/v)
E100	33-74% (v/v)
E150	80-97% (v/v)
E180	91-99% (v/v)
DVPE	42-105 kPa
Driveability Index	860-1300
Vapour Lock Index	500-1450
MTBE	0.9-10% (m/m)
ETBE	1.9-20% (m/m)
TAME	1.8-20% (m/m)
Methanol	0.3-6% (m/m)
Ethanol	0.6-11% (m/m)
DIPE	0.9-20% (m/m)
tert-Butanol	0.9-14% (m/m)
Total Oxygen	0-50% (m/m)
Olefins	0.3-27% (v/v)
Total Aromatics	5-40% (v/v)
Aromatics C7	0.8-16% (v/v)
Aromatics C8	0.5-18% (v/v)
Benzene	0.06-5% (v/v)
VOC	1040-2171 mg/mi
VOC Performance	-27.6 to 48.1%
Saturates	0-95% (v/v)
Density	0.6 - 1.2 g/cm <sup>3</sup>

### DIESEL

Properties <sup>1</sup>	Range <sup>2</sup>
Cetane Number	41-65
Cetane Index	43-65
FAME (low to high concentration)	0.05-100% (v/v)
Density	0.6 - 1.2 g/cm <sup>3</sup>

### JET FUEL

Properties <sup>1</sup>	Range <sup>2</sup>
Density (built-in U-tube cell)	0.6 - 1.2 g/cm <sup>3</sup>

Global sample  
database  
analyzed by



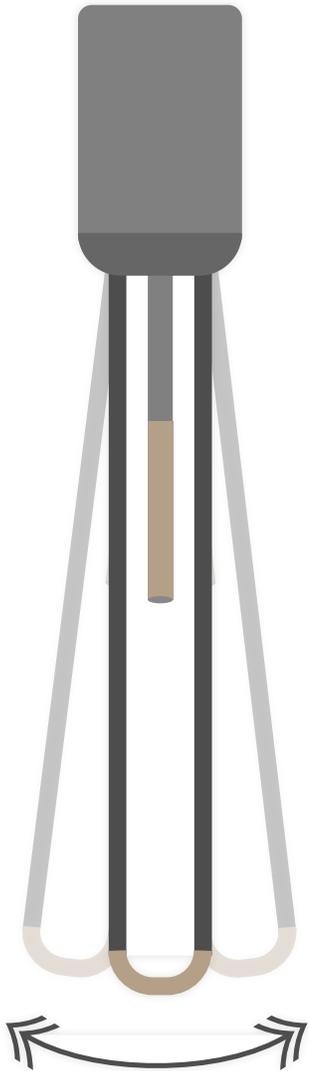
NOTES:

1. Range and quality of prediction is related to database used.

2. The lowest concentration value is related to the Limit of Detection (LOD).

## DENSITY MODULE

An ASTM compliant Oscillating tube density module, capable of measuring from  $0.6 \text{ g/cm}^3$  to  $1.2 \text{ g/cm}^3$ , is integrated in each OptiFuel to provide direct density reading. Per ASTM D1250-04 algorithm, densities of hydrocarbon samples can be reported at  $15^\circ\text{C}$  from  $0.6$  to  $1.2 \text{ g/cm}^3$ . This eliminates the need for an external density meter.



## ROAD-TESTED FOR MOBILE APPLICATIONS

OptiFuel comes in a rugged, yet elegant, design with a friendly user interface, which makes it ideal for refineries, pipelines, terminals, and mobile labs.

We used only the best materials to ensure it delivers unmatched performance in any application, and tested through intense shock, vibration and drop, per applicable IEC procedures.



Mobile Lab is enclosed climate controlled lab with ambient temperature and humidity within product specification to obtain desired performance.

## MOBILE ACCESSORY PACKAGE



**Anti-vibration platform**



**High-performance lithium ion battery with power supply**



**Vehicle adapter**

NOTE: OptiFuel runs for over 5 uninterrupted hours on just the battery pack, untethered from a vehicle, or an external power outlet.

## COMPLETE CONNECTIVITY

Easily connect your OptiFuel to your network printer or LIMS system. You can also digitally clone your OptiFuel with a USB drive.



## METHOD-APPROVED

Compliance	Correlation		Method Applications
<ul style="list-style-type: none"> <li>● ASTM D6277</li> <li>● ASTM D5845</li> <li>● ASTM D7371</li> <li>● ASTM D7777</li> <li>● ISO 15212</li> </ul>	<ul style="list-style-type: none"> <li>● ASTM D2699</li> <li>● ASTM D2700</li> <li>● ASTM D5191</li> <li>● ASTM D86</li> <li>● ASTM D6839</li> <li>● ASTM D613</li> <li>● ASTM D4737A</li> </ul>	<ul style="list-style-type: none"> <li>● EN ISO 5164</li> <li>● EN ISO 5163</li> <li>● EN 13016/1</li> <li>● EN ISO 3405</li> <li>● EN ISO 22854</li> <li>● EN ISO 5165</li> <li>● EN ISO 4264</li> </ul>	<p>Correlation Results for Methods in Specifications:</p> <ul style="list-style-type: none"> <li>● ASTM D975</li> <li>● ASTM D4814</li> <li>● EN 228</li> <li>● EN 590</li> </ul>

# TECHNICAL SPECIFICATIONS

Spectrometer Type	FT-IR Michelson Interferometer		
Standard Test Methods	<b>Compliance</b> - ASTM D6277, ASTM D5845, ASTM D7371, ASTM D7777, ISO 15212 <b>Correlation</b> - ASTM D2699, ASTM D2700, ASTM D5191, ASTM D86, ASTM D6839, ASTM D613, ASTM D4737A, EN ISO 5164, EN ISO 5163, EN 13016/1, EN ISO 3405, EN ISO 22854, EN ISO 5165, EN ISO 4264 <b>Method Applications</b> - Correlation Results for Methods in Specifications: ASTM D975, ASTM D4814, EN 228, EN 590		
Mirror Design	Friction-free, vibration resistant, cube corner mirror		
Mirror and Beam Splitter	Humidity resistant ZnSe		
Density Measurement	Oscillating tube		
Units of Measurement	%m, %v		
Scan Range	550 - 4000 cm <sup>-1</sup>		
Spectral Resolution (max.)	2 cm <sup>-1</sup>		
Measurement Time	30 seconds		
Sample Introduction	From air pressure		
Sample Volume	20-30 ml depending on sample type		
Calibration Model	Factory calibrated with matrix of several hundred global fuels (analyzed by SGS)		
Regional Calibration Model Update	Yes		
Cleaning	Solvent (≥ 99.9% Toluene, >99% Hexane)		
Operating Temperature	15°C to 35°C	Storage Temperature	-40°C to +85°C
Humidity (Non-Condensing)	0% to 80% RH*		
Leak Test	Automatic		
Filter Replacement Monitor	Automatic		
Fume Sensor	Yes	Real-time Safety Monitoring	Yes
Display	7" color touch screen		
Interface	3x USB - 1x Ethernet		
Instrument Memory	100,000 test results		
Power Requirements	110V to 230V - 50/60 Hz, 60 W. 24V battery pack option available, connectable to 12V.		
Dimensions & Weight	8.5" x 14" x 16"   22 x 36 x 41 cm (W x H x D) 32 lbs (14.5 kg)		
Packaging	24" x 24" x 24"   61x 61 x 61 cm (W x H x D) - 56lbs (25.4 kg)		
Certifications	ISO 9001:2015, CE, ROHS II		

\*Must maintain instrument internal humidity less than 50% via regular desiccant change. Continuing research and development may result in specifications or appearance changes at any time.



## ABOUT PAC

PAC develops advanced instrumentation for lab and process applications based on strong Analytical Expertise that ensures Optimal Performance for our customers. Our analyzers help our customers meet complex industry challenges by providing a low cost of ownership, safe operation, high performance with fast, accurate, and actionable results, high uptime through reliable instrumentation, and compliance with standard methods.

## HEADQUARTERS

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Our solutions are from industry-leading brands: AC Analytical Controls, Advanced Sensors, Alcor, Antek, Herzog, ISL, Cambridge Viscosity, Phase Technology, PSPI, and PetroSpec. We are committed to delivering superior and local customer service worldwide with 16 office locations and a network of over 50 distributors. PAC operates as a unit of Roper Technologies, Inc., a diversified technology company and a constituent of S&P 500, Fortune 1000, and Russell 1000 indices.



Contact us for more details.  
 Visit our website to find the  
 PAC representative closest to you.

